

# **Developing a Business Case for Farm Woodland Co-operatives in Scotland**

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## Executive Summary

Farm woodland makes up about 26% of all Scottish woodland representing a significant and underutilised resource for providing wood fuels, mitigating greenhouse gases and as a springboard for further growth of the Scottish forest estate. However, farm management of woodland as a commercial crop is an unfamiliar concept to most Scottish farmers and, as farm woodlands are most often small patchworks of tree cover across the wider farm unit, as a potential crop it has all the inefficiencies of small scale.

The emerging wood fuel market plus food chains reacting to the climate change agenda demanding demonstrable reduction in carbon footprints is creating a clear market pull, this coupled with Scottish government policy to increase planting is changing the perspective of agriculture towards woodland management. But the speed of reaction to policy and market pulls is being delayed by a number of issues at farm level including the perception that there are too many risks within woodland creation and management processes.

This paper proposes that a co-operative approach will be required to encourage farmers to utilise their farm woodlands into the emerging wood fuel market, manage their farm woodlands as a crop and plant additional woodland. This approach has to be carried out holistically to encourage farm participation and collaboration, obtain economies of scale and develop commercial sustainability.

Agricultural co-operatives have helped farmers achieve economies of scale and are a means by which farmers jointly employ professional management able to manage and deliver supply and specification continuity into the market place, while at the same time deliver economic returns to farmers for their crops. Wood energy co-operatives are already common and well developed in the US, Scandinavia and Austria with sophisticated supply chains. Early survey work amongst Scottish farmers suggest that 42% of farmers felt that co-operation to support woodland creation and marketing of woodland products would be worthy of further consideration.

By working within a co-operative, farmers would be able to internalise at least 40% of the cost of ground preparation, planting, fencing, harvesting, processing and transport thereby adding to the economic viability of the woodland crop, similar to the way that machinery/ labour rings work within agriculture and who would in any case be able to assist with this form of development. Farmers will also be more willing to engage with woodland management if the support mechanisms are more familiar, e.g. Grants, rather than being largely focussed on woodland establishment, be directed towards consistent management incentives through the entire lifecycle of the woodland crop.

With whole lifecycle woodland cropping supported by professional management as the imperative, it is essential that any co-operative is able to be commercially sustainable over the long term. This will require any farm woodland co-operative to have at least 250 farmer members to provide sufficient turnover and income potential; and, during the early stages it will need to be supported with a development package capable of attracting a long term committed membership.

## **Conclusion**

Our conclusion is that a professional co-operative approach will be required to encourage farmers utilise their farm woodlands into the emerging wood fuel market, care for their farm woodlands as a crop, and plant additional woodland towards mitigating greenhouse gases.

Any co-operative group will need to be commercially viable and given that farm woodlands are small, diverse and of indifferent commercial qualities, they will necessarily need to be supported by professional management able to support farmers through the whole crop cycle and provide the wood fuel market with committed continuity and specification over the long term.

We suggest that the minimum size of any farm woodland co-operative will be 250 members producing over £600k of woodchip sales and managing the necessary logistics to harvest and process timber in addition to providing support throughout the whole crop cycle, with the arising costs internalised as much as possible to provide additional income streams both to the co-operative itself and to its members.

This form of business is sophisticated and will require significant support from the Forestry Commission, co-operative development organisations and, tap into other agricultural concepts and support structures that are familiar to farmers, one of these concepts being co-operation itself.

## **Next Step**

Our suggested next step is for the Forestry Commission and SAOS to commit to a working feasibility, with support from CDS, whereby a business design (or model) with various early support mechanisms is developed capable of attracting a committed membership of farmers within a particular area e.g. Grampian Conservancy.

The model becomes fully developed through practice and replicated throughout Scotland, perhaps with the long term objective of around ten self supporting farm woodland co-operatives, each with more than 250 members.

## Introduction

This paper was developed to supplement the report 'Responding to the Woodland Creation Targets in the Grampian Conservancy Area' for the Forestry Commission (FC) completed in March 2010.

The purpose of the paper is to inform policy development about the infrastructure that might be necessary to supply the emerging wood fuel market from farms and other small woodlands on a significant scale and how farmers might be encouraged to increase their planting of woodland with the long term aim of meeting Scottish Government targets.

It was prepared by the Scottish Agricultural Organisation Society Ltd (SAOS), owned by Scottish farm and rural co-operatives, whose aim is to strengthen the profitability, competitiveness and sustainability of Scotland's farming and related rural industries through the development of co-operation and joint venture; and, supported by Co-operative Development Scotland (CDS), a subsidiary of Scottish Enterprise, who have a remit to 'promote and facilitate the development of co-operative enterprises' throughout Scotland.

Concerning co-operative working across farm woodlands, the FC report stated that around 42% of farmers would be more willing to plant trees if they did so as part of a co-operative group; however, the study team concluded that such development is likely to encounter difficulties. The difficulties concern the unfamiliarity within the UK forestry sector of the co-operative approach and within the farming sector of woodland establishment and management. Added to this there is no immediate market driver e.g. the wood biomass market supplied from the small woodland sector is only emerging, and so the driver for initiating co-operative development necessarily must be policy.

Over the longer term the objective of any co-operative development is for the business to become self sustaining. This paper discusses how such a business case might be developed, whilst setting out how co-operative working might help to develop the psyche of farmers towards regarding woodland as a viable crop, rather than largely for shelter belts, amenity, or, indeed, recognizing its value at all.

## Context

The work recently undertaken by the study team in the Grampian region highlighted a number of issues in relation to the creation and management of woodlands on agricultural land. This work brought out a number of issues and benefits:-

- Farmers do have ambitions to extend woodland cover but not to the target level being sought by current policy
- There is a perception that there are too many risks in the woodland creation process and that the grant application and subsequent management procedures are too onerous
- There is a majority of farmers who were either out of touch with, or indeed had never received best practice information on woodlands
- Farmers were however aware of the carbon benefits of woodlands and knew in broad terms about the energy potential of woodlands; and critically
- Farmers are used to the concept of agricultural co-operatives and machinery rings and felt that such models could be helpful to take forward new woodland creation and product marketing.

However, with farm woodland cover in Scotland, according to agricultural census data, sitting at c. 350,000 ha, and representing 5.7% of all agricultural land use, the average farm woodland size is relatively small at nearly 7ha per holding. This area also includes woodland classified as “open woodland suitable for grazing” which is likely to include areas of scattered trees in an open landscape with relatively low production potential. At the time of writing, it is not possible to disaggregate this type of woodland area from the overall statistics, but the underlying point remains that farm woodland’s in general are often small patchwork’s of tree cover across the wider farm unit, with all the inefficiencies of scale that this brings with it.

Scotland’s farmers’ exposure to co-operatives has been driven by strong market signals to a) increase efficiencies in purchasing power of input materials and b) bulking up merchantable quantities of products to achieve better prices in the market place for agricultural products only. 65% of Scottish farmers with farms larger than 100Ha co-operate, and the 10 largest members of SAOS have a combined turnover of £1,590 million. More recently, some of the main market pulls via the major multiples have started to drive standards beyond the welfare and quality assurance agenda, on to that of carbon and emissions reduction, in which woodlands play a significant role.

Academic studies have shown that agricultural co-operatives have helped farmers to achieve economies of scale and this is borne out by the experience of successful farming co-operatives in the UK and Ireland. Co-operatives play an important role in helping small and family farms to remain viable and, in-turn, contribute to sustaining local communities. Marketing co-operatives have been particularly important in the agriculture industry in the US, and are also relatively common in the UK. Studies have shown that productivity can be improved through co-operative membership. A study in Southern Italy concluded that membership of agriculture co-operatives by small farmers led to greater crop diversity, improved marketing, lower marketing costs and, ultimately, higher crop yields. There is also evidence from the United States where membership of 3,400 farmer-owned co-operatives, which market 30% of US farm product, help farms to adapt to changing commercial conditions, by maximising the benefit from crop rotation and diversification into new markets. This includes supporting them to move into energy markets. Concerning timber, Finnish co-

operative groups are responsible for 34% of forestry products and in Norway forestry co-operatives are responsible for 76% of timber production and harvesting.

## **A Co-operative Solution?**

The fundamental market drivers highlighted above are actually no different in the woodlands and forest products sectors and the reasons for the lack of an obvious woodland co-operative sector is probably due to:-

- Woodland information not being presented to farmers in a familiar way resulting in information gaps e.g. grant availability & potential commercial income from wood sales
- The market pull being weaker than the policy imperative to increase woodland cover; the commercial logic needs to be clearly articulated
- Failure to develop the opportunity to use existing agricultural co-operatives as a vehicle for woodland creation and management.

In other parts of the world, private woodland owner's have a long history of co-operating, both formally and informally. Landowner co-operatives in Sweden and Norway buy logs or standing timber from members, and in turn sell it to mills at negotiated prices that individual owners themselves could not possibly achieve on their own. In some European countries, landowners co-operate by sharing harvesting equipment or purchasing supplies in bulk in a similar way to machinery rings and buying groups in Scotland. Sometimes landowner co-operatives share or provide services like fencing or woodland management. In France, Germany, and the Netherlands, landowner co-operatives work to consolidate very small parcels into larger units that make management feasible. In Austria and Germany, landowners co-operate to carry out habitat planning on a catchment scale.

Fundamentally, from a Scottish perspective, our earlier survey work concluded that a significant proportion of respondents felt that collaboration with existing co-operative structures, perhaps machinery rings, to support both woodland creation and the marketing of woodland products (especially woodfuel), would be worthy of further consideration.

If we look at woodlands on farms as a business opportunity in the round, there are two aspects in particular that have potential for co-operative growth:-

- The creation of new woodland on farm's at a rate that the farming community feel comfortable with.
- The management of existing woodland, which is currently under-managed or unmanaged in any way.

What might the size of those opportunities in Scotland be?

## **New Woodland Creation**

Whilst our original survey work highlighted a significant resistance to the policy driver which is seeking to achieve 25% woodland cover across Scotland, those we interviewed seemed to be more comfortable with an on-farm level of c.10% which, compared to the apparent current levels of woodland cover on farm holdings, is still a significant increase. If the census figures are correct, then raising the current average woodland cover on farms from 5.7% to 10% would involve an additional 267,000ha of land converting to tree cover over a period of time, perhaps within the next 20 years. This by anyone's measure is a significant land use change but again, referring to our earlier survey work, will not be easily achieved unless and until the perceived risks and barriers to entry are overcome. This is particularly important because from a farmers perspective, woodland is perceived as a long-term investment which is largely policy driven rather than pulled by the market.

Assuming these barriers can be overcome as highlighted in the earlier report, then the direct cost of establishing an area of additional land at current prices is estimated at around £0.7bn. This is a significant business opportunity in which, farmers have traditionally been largely passive, and have tended to rely on outside contractors to carry out woodland establishment. The cost inefficiencies of establishing small scale woodlands of 1-5ha is well known, but farmers have an opportunity, through co-operative structures to:-

- Bulk order plants and herbicides on behalf of members
- Undertake ground prep and planting through labour ring services
- Develop management plans and provide support services exchanging ideas and building skills.

We would anticipate that by using co-operative structures, the above cost could be reduced by c.10% in terms of purchased inputs and that around 40% of the costs could be "internalised" to the co-operative/machinery ring in terms of labour and equipment used instead of those being contracted in.

It has to be said that the existing commercial forestry management companies; both the majors and the smaller scale businesses, have more than sufficient capacity to take on all current demand for new woodland planting in Scotland. This is presently running at historic lows in Scotland of c 2,500 ha per annum in the private sector (Forestry Commission estimates), when in the late 1970's, 25-30,000 ha of new planting a year was not uncommon. However, the critical point here is that we believe that farmers will react more positively to woodland creation if they are involved and engaged using familiar business structures like co-operatives and machinery rings. It seems to us that forest management company/farm co-operative collaboration opportunities must exist.

### **Policy Push - Market Pull**

We will return to the "process" issues later when we will discuss the barriers and risks that are part of the policy driven agenda. However, alternative approaches to stimulating the market pull side, needs to be considered by the industry in general. With retail multiples reacting to the climate change agenda and demanding demonstrable reductions in carbon footprint from their suppliers, it would seem as appropriate and more efficient to sell the message of the beneficial effects of woodlands on carbon reduction to multiples like M&S, Waitrose and Tesco as it is to try and tackle over 50,000 individual farm businesses with the same message.

## Unmanaged Woodlands Back into Management

Whether or not a woodland owner has commercial aspirations for their woodland, the management of woodlands is fundamental to ensure:-

- The health of the crop
- The maximization of carbon capture from the woodland
- The best possible yield of final crop with best potential for a wide range of market options.

It is very difficult to provide reliable estimates of true yield potential of woodland on farms. The census data from the Scottish Government's Rural Payments and Inspections Directorate's (RPID) simply records the area of woodland on a given holding. Forestry Commission data does not define farm woodlands as a separate category. The survey of native woods in Scotland is only partially complete, is carried out periodically, and will include woodlands that are off farm. The last recorded data on small woods and trees in Scotland featured in the 2001 National Inventory and, for the assessment of small woods, was using data collected in 1995. At that time, the recorded area of small woods in Scotland of less than 2ha was 28,697 ha. At the same date (1995) woodland on farms was recorded as 152,010 ha in the agricultural census. Of course, woodland on farms does range in size with the current average apparently nearer to 7ha per holding. This is a larger figure than would be picked up in past or indeed future small woodland surveys, so it would appear that the fundamental data issue is going to be difficult to resolve.

The data from the agricultural census doesn't give us a feel for the age profile, species, stocking density or yield class of the 351,000 ha of woodlands on farms so it is really difficult to come forward with concrete future yield estimates. However, our earlier survey suggested that 21% of existing woodlands were not managed in any way at all and we also feel that this is probably an underestimate of the real situation.

Using some broad brush estimates and assuming that the species mix, age class structure and yield are similar on farm woodlands to that of the National forest estate as a whole which harvests circa 4.85 m<sup>3</sup> of timber per total Ha per annum, then for 2009 :-

- Total Scottish forest estate is 1,341,000 ha
- Total Scottish harvested yield per annum is c 6.5m m<sup>3</sup> per annum
- Total woodland on farms (RPID) 351,000 ha (26% of all woodland)
- Estd unmanaged farm woodland (21% of 351,000 ha) = 74,000 ha
- Net managed woodland on farm = 277,000 ha
- Estd yield from managed farm woodlands = 1.3m m<sup>3</sup> per annum
- Estd potential yield from unmanaged farm woodlands = 345,000 m<sup>3</sup> per annum

The farm woodland yield figures, however, are likely to be overestimates given that RPID definition of farm woodlands includes a currently unknown proportion of "open woodland for grazing". The best estimate for the harvesting potential of unmanaged woodland would probably be in the range of 250-345,000 m<sup>3</sup> of roundwood per annum, which based on largely thinning material that would have a gross value of around £6-8m delivered as roundwood.

As we note above, the existing production from managed farm woodlands in Scotland appears to be in the 1-1.3m m<sup>3</sup> per annum range, which is a significant volume by any measure. For the purpose of this exercise though, we are assuming that market arrangements are already in place for this volume and existing mechanisms are operating in an orderly fashion. Our focus will be on the additional potential volume from unmanaged woodlands where clearly there is no current activity and therefore no displacement effect.

## **A case study**

The unmanaged woodlands on farms may be unmanaged for a variety of reasons. Lack of awareness of markets and harvesting practices may be one, but equally likely is the prospect that the woods are located in difficult places to access, or are small and patchy in nature. In addition, the quality of material is likely to be poor, with undersized or misshapen stems being common. This is likely to rule out the material for conventional small roundwood markets for say chipboard or oriented strand board, where specific quality standards apply. Equally, difficulties in accessing woodland in small patches is not going to be attractive to specialist harvesting contractors and hauliers.

An alternative scenario is to use the existing technology on farms' with support from machinery and labour rings to provide equipment and material for the newly emerging biofuel energy market in Scotland. This market is tolerant of roundwood specification and quality provided effort is put into the processing and storage of the added value product, woodchip.

The involvement of farmers in the wood energy market is commonplace throughout the US, Scandinavia, Denmark and Austria and quite sophisticated supply chains have been established. In some cases, this includes full integration into the end user, and charging for energy used. In rural areas these are district heating schemes or other municipal facilities.

The article below from Biopact in Austria in early 2008 highlights an interesting success story, which illustrates farming's ability to co-operate and supply a defined energy market opportunity.

"The Austrian state of Carinthia, in the south of the country, has opened its first co-operatively managed service station for biomass. 7000 small farmers are members of the energy co-operative, which collects residual wood and turns it into finished products ready for combustion in large biomass power stations and small heating units. Biomass users come to tank up at the station. The collection point is located in Feistritz/Drau and offers technical assistance as well as machines to the members. By co-operating, the farmers achieve scale, a stable supply, and a new market, which allows them to increase incomes by an estimated 15 percent.

The idea behind the energy co-operative is simple: hundreds of small farmers' team up to supply wood to the station, which turns it into dry wood chips that are bought by several big customers. The initiative emerged out of the idea to make sustainable exploitation of local forest and woodland resources more attractive again.

Many farmers had lost interest for years, because there was no market. The emerging bio energy sector signalled a change. When you only have a limited raw material resource base, individual farmers did not see much opportunity as single suppliers: investing in heavy equipment, drying and storage facilities. Last autumn,

an existing farmers' co-operative therefore launched the idea of a collectively supplied "biomass station" that takes away the investment risk by distributing it over many farmers. It became a success: hundreds now participate as suppliers.

*The simple farmer cannot compete with his small quantities. But with our organisation we offer scale and thus we can help him get access to a much larger market. This guarantees his survival.* - Josef Steiner, Maschinenring

Biomass is seen as an attractive energy source, because not only is it renewable, it has become the least costly of all fuels. But biomass is more than wood. Biomass fuels consist of raw wood that has undergone a simple transformation process: it is collected, dried, stored and turned into chips or pellets. It is this seemingly insignificant transformation that makes all the difference to the farmers. It adds value and opens the market. Individual farmers often don't have a large enough wood supply to warrant investment in the machines needed to carry out these processes.

*The farmers now have the possibility to create value with the machines offered by the co-operative. They do not merely sell wood, they supply a true fuel for energy, namely wood chips with a high heating value.* - Christoph Aste, Managing Director of the co-operative - Carinthia Maschinenring."

## Potential Returns for Woodchip

Considering the development of farm woodland co-operatives, converting the estimated unmanaged annual harvest to woodchip, could bring additional benefits to the farm/farm co-operative. The initial harvesting and distribution of log lengths could be handled by existing farm machinery and equipment, with the more specialist chipping and subsequent storage being handled by the co-operative, machinery ring, or grain store.

Market prices for woodchip vary considerably and are prone to significant variation with geographical region, order quantities, overall contract size and duration, time of year, delivery distance and time, and so forth. Typical prices range around the £70-£100 per tonne at 30-35% moisture content, delivered to local user.

With that in mind, the comparator returns between conventional roundwood and energy chip are estimated at:-

- Conventional roundwood delivered to end market = £20-£25 /m<sup>3</sup>
- Probable margin to farmer = -£5 to + £5 /m<sup>3</sup>
- Woodchip delivered locally = £70-£100/tonne
- Woodchip harvested, chipped, stored and delivered = £36-£40/tonne
- Probable margin to farm/cooperative = +£30 to +£64/tonne

Taking the lower end of the potential unmanaged woodland harvest; allowing for different moisture content between harvest and sale, and using the lower end of the potential margin after costs figure, the return is c £5.8m or £78/ha (£230/ha at the optimistic end of the yield and value scale)

### Cost-Benefit Analysis

At this stage, a formal cost-benefit analysis is not possible due to data constraints. However, it is possible to identify the likely categories of costs and benefits that will be considered by the public and private sectors. For the latter, the benefit sought is likely to be an increase in income whereas for the public sector it is an increase in new woodland creation. Similarly, whilst the private sector will focus on the on-farm costs incurred, the public sector will consider exchequer support incurred over and above the current level of costs. That is, the baseline position is the current one of relatively low woodland creation on farms.

For private sector woodland co-operatives to deliver a positive cost-benefit or cost-effectiveness result, they need to offer a combination of establishment cost savings and market value gains. From a public sector perspective they need to offer increased woodland creation rates at lower additional exchequer cost than other policy alternatives. In this respect, co-operatives may be attractive if they achieve a sustainable business model by encouraging farmers to gain a sense of ownership and involvement that is perhaps lacking in a model based solely on grant aid and the use of third-party contractors. However, up-front seed-corn funding may be necessary to facilitate the development of co-operatives.

## Business Model

The choice of business model is fundamental to the future success of any organisation, by setting out the rationale of how it creates and delivers value for its stakeholders. The process of business model design is part of the business strategy, representing core aspects concerning purpose, values, service offerings, trading practice, organisational structure and operational processes and policies.

In the study 'Responding to the Woodland Creation Targets in the Grampian Conservancy Area', of the sample 302 respondents to the study survey, 42% indicated that they would be more willing to consider planting trees if they did so as part of a co-operative group.

Farmers will mention using a co-operative group because it is a familiar concept designed to provide goods and services whilst providing all of the benefits of common ownership to their own farm business. It was clear from the survey work that farm management time, skills and labour is at a premium and farmers' do not wish to add further demands to their business.

The indication by farmers of their willingness to use a co-operative group is firstly to be seen to be participatory and doing something that they would not otherwise manage to do, and secondly to ensure that any enterprise vulnerability is not exposed and exploited by others for profit. This is particularly true for any enterprise that is unfamiliar, and noted in the previous study which identified a lack of skills, high transaction costs and poor understanding relating to management of farm woodland.

In the case of woodland co-operatives, the business model has to appeal to a community of potential users (farmers and other stakeholders), who will over time build a loyalty to their co-operative organisation that provides them with tangible value to their own business at home. The development of a co-operative in itself is not enough to ensure any success. There has to be a clear business imperative and structure on which to add the co-operative element.

Unfortunately the business imperative for establishing and managing farm woodland is presently thin - 'jam tomorrow' – however the growing wood fuel market will develop and commercial green house gas (GHG) benefits of timber will begin to emerge over time. These emergent markets provide a long-term objective for a co-operative, with a shorter term objective to build a model capable of nurturing and building a business network capable of exploiting the emerging markets.

'Jam tomorrow' as the argument for farmers to develop woodland co-operatives now is not tenable. There are simply too many competing enterprises that are providing solid cash flow from land use presently, and these enterprises e.g. cattle, provide a host of other benefits to the farm, from social standing to immediately bankable assets, for farmers to be primarily concerned about woodland.

It is clear that other stakeholder support will be required to underpin a co-operative development, where that stakeholder can pursue their objective by the development of co-operative working. The Forestry Commission (FC) has the clear objective to increase woodland planting in line with Scottish Governments own strategy: the beginning of the crop cycle.

Presently in farmers' psyche, woodland is not perceived as a crop, rather as a shelter belt, amenity or some use for a bit of wet, steep or rocky ground that is no good for agriculture. Where co-operative working introduces the concept of managing a woodland crop cycle then it will be able to work towards achievement of the FC objective and also work towards the farmers' objective of realising a commercial income from their woodland management.

This co-operative concept is known as a 'multi-stakeholder co-operative' which is well developed in Canada and Italy where two or more membership types or groupings of members with slightly different objectives work together to exploit a symbiosis between the objectives. Cooperative Development Scotland have carried out similar pioneering work on what they call 'Consortium Co-operatives' where different businesses and/or types of businesses can work together to achieve agreed objectives.

A concern arising from the multi-stakeholder model is that it can lead to confusion and misunderstanding, regarding the development of various co-operative activities; their subsequent management and membership responsibilities. It can also manifest itself in engendering complete reliance of one membership group on the other, rather than ensuring autonomy is developed and maintained. This issue may be relatively easy to deal with in a farm woodland co-operative, as there are distinctive work streams within the crop cycle: planting, management, harvesting the Forestry Commission's role; the farmer's role and any other associate members' role (advisors, contractors) should be distinctive.

However, at the outset it is imperative that the co-operative model can be explained succinctly and be recognisable. This will quickly build understanding and thereby loyalty to any new co-operative organisation.

There is a distinct advantage to be had from relating to familiar concepts and being absolutely clear about the role of and the benefits to be derived from the co-operative. The following provides a desk worked example of the business objectives that might be typical for a farmers' and small woodland owners co-operative:

**The Objective:**

- To develop and sustain farm income from woodlands.

**Over-arching strategy:**

- To establish a co-operative to reduce purchase costs, operational costs and maximise value of sales.

**The Business Strategies:**

- Develop skills and knowledge
  - Share management, technical services, knowledge and advice
- Assist farmers to extract timber from managing existing woodland
  - Organise farm labour and machinery to perform various functions
  - Joint ownership or management of specialist machinery

- Develop local routes to market for woodchips
  - Aggregate goods to access larger markets / customers
  - Organise on-farm chipping and haulage to a central store
  
- Encourage farmers to plant woodland on suitable areas
  - Reduce or share risks inherent with the enterprise
  - Reduce the bureaucratic burden
  - Provide assistance with establishment and beating up
  
- Develop independent income streams for the co-operative
  - Annual (token) membership fee
  - Small percentage of group purchased plants and other inputs
  - Marketing fee for woodchips
  - Management fee for group management of plantations

## **Familiar Concepts**

Managing woodland as a crop as distinct from a shelter belt, amenity woodland or means to utilise a areas of land unsuitable for food crops, is an unfamiliar concept to most Scottish farmers. To enable a shift over time whereby farmers begin to treat woodland as a viable crop will require relating various management functions to other more familiar concepts. Some example concepts are:

### **Developing Skills and Knowledge**

A model which is familiar to many Scottish farmers was the Farm Wildlife Advisory Group Scotland (FWAG) which was a central operation affiliated with local action groups. Despite the Scottish FWAG losing its funding support, the organisation still operates in England and Wales and is the leading independent and dedicated provider of environmental and conservation advice to farmers. The website address is <http://www.fwag.org.uk/>. An annual membership costs farmers around £41 and provides:

- Reputable, one-stop access to up-to-date agri-environment legislation and the regulations affecting your farm plus guidance on how you can implement them.
- Priority telephone advice on environmental opportunities and problems.
- Invitations to a wide range of farm walks, demonstrations, training, workshops, conferences and events which focus on relevant schemes, environmental issues and management techniques.
- Free national magazines and updates, technical fact sheets and local newsletters.
- A voice through FWAG on national consultation responses and policy engagement.

### **Use of existing co-operative mechanisms – Machinery / Labour Rings**

In a survey conducted for SAOS by George Street Research, 59% of farmers spontaneously mentioned machinery / rural business rings when asked about their involvement in co-operation. The annual turnover of Scottish business rings is circa £56 million with 6,300 members.

The Scottish machinery rings are the largest rural training provider, offering a full range of skills training and statutory certification for machinery operations and chemical applications.

A machinery ring matches a shortage of machinery and labour skills on some farms with spare capacity on other farms. For a supplier, this form of contracting reduces the major costs of machinery ownership, interest and depreciation on a cost per acre or per hour basis. Conversely the user does not need to own all machinery required by his farm, thereby reducing fixed costs. Most members are suppliers of some operations/equipment and users of others. This allows each member to more fully utilise their own machinery and maximise available labour and skills.

By affiliating with the nine machinery rings throughout Scotland, woodland co-operatives' would be able to access a highly organised and efficient network of machines, labour and management skills.

Ringlink Ltd, which is the largest Scottish ring, provides the Forestry Commission with men and machines on a continuing basis for forestry / woodland operations that amounts to circa £4-5000 per week in turnover.

One of the principle benefits of utilising existing labour and machine contracting is to increase the income potential from the various timber operations to co-operative members. In other words the costs of timber operations are retained within the co-operative grouping thereby removing the reliance solely on the net value of timber product sales; and, smaller farmers can increase their income from performing various woodland contracting operations from planting through to harvesting and processing.

### **Develop Local Routes to Market for Woodchips**

Dealing with the logistics of processing, storage and delivery through complex supply chains is the core activity of the Scottish farm co-operative sector. Six of the top ten Scottish farm co-operatives handle over £1.3 billion p.a. of farm produce. However, these co-operatives work in very mature markets using tried and tested systems.

Most agricultural co-operatives have been established to deal with 'market failure' often where smaller producers are unable to individually negotiate favourable market terms. Although this reason remains for many food commodities, arguably the larger task in hand for the wood fuel market is establishing continuity of supply infrastructure and maintenance of specification, particularly in that the price point for wood fuel seems to be largely driven by the price of liquid fuels and therefore subject to price variations. Maintaining supply systems throughout market vagaries requires sophisticated agreements between producers and reference to mature systems will be helpful in this regard.

As discussed earlier the most feasible market route for farmers is into the emerging woodchip market. The logistics are similar to those for harvesting, drying, storing and delivering grain. Woodland co-operatives' would be able to consult professional grain co-operative managers for guidance. This would include capital structures, and supply agreements, harvesting schedules and processing specifications to provide continuity.

### **Encourage Farmers to Plant Woodland on Suitable Areas**

Agricultural crops with the longest establishment times include daffodils, raspberries, blackcurrants, and generally these are cropping within 3 years or less from establishment and are specialist crops. All other farm crops are annual and therefore calculating cash flow, gross margins and allocating fixed costs is well understood by the industry. Not so for timber. In addition, woodland planting grants have been complicated to administer and have changed on a fairly consistent basis leading to confusion, possibly assisting the indifferent attitude with the agricultural industry to woodland management.

The challenge will be to encourage the agricultural industry to develop a management psyche towards farm woodland where management input is sufficiently consistent to develop sustainable income streams. We are suggesting that rather

than grants being largely focussed on woodland establishment, it may be beneficial to look at consistent management incentives through the entire lifecycle of the woodland crop. The Animal Welfare programme outlined below provides an example of this approach, and is part of the SRDP programme.

**Animal welfare programme** - Under the Scotland Rural Development Programme Rural Development Contracts – Land Managers Option 23 is the Animal Welfare Management Programme, which sits within the Scotland Rural Development Programme (SRDP), within Rural Development Contracts. (RDC). The aim of this option is to support livestock producers to adopt and continually improve high standards of animal welfare over a 5 year programme. This option is designed to assist farmers' reduce common endemic diseases on farms, and improve livestock welfare and thereby ensure the economic viability of the farm business.

Overall the programme is designed to provide farmers with an incentive to support costs incurred in improving the health and welfare of livestock. This is carried out in conjunction with a vet who assists with the planning and recording necessary to evidence the improvements in the animals' health and welfare.

The farmer can choose from ten options, and develop those that he deems most suitable for his own farm in to a 5 year plan. Payments are made annually on completion of each of the options.

The objective is to assist in reducing common endemic diseases on farm, make significant improvements to the welfare of livestock and support the economic viability of the farm business and it includes the following actions:

- an animal welfare review
- an animal welfare monitoring and benchmarking
- an animal welfare management plan, and
- a minimum of 3 specific actions to improve welfare

We would suggest that the concepts within the Animal Welfare Programme may be useful in devising a better method of supporting farmers to better manage their woodlands with the objective of developing a woodland 'crop psyche'.

### **Commercial Sustainability and Independent Income Streams**

Arguably the biggest hurdle to farm woodland groups will be developing a commercially sustainable model able to consistently deliver wood fuels that meet market needs for continuity and specification over the long term, provide adequate income to farmers and, be able to develop and grow as businesses. The main impediment is that farm woodlands are small and diverse and in forestry terms are generally of poor quality. The challenge will be developing sufficiently robust management systems that are self supporting and able to meet with farmers commercial objectives.

From the outset the co-operative must begin to build independent income streams through its activity with members, independent of any income that may be derived through the Forestry Commission or by way of other grants.

We would argue that independence is necessary to provide for a dedicated management function able to ensure that wood fuel markets are provided with

continuity of delivery and specification of wood fuel and have access to a timber resource able to meet a market demand irrespective of issues such as weather or equipment breakdown

The business function would necessarily be based on developing the following independent income streams:

- Annual (token) membership fee
- Small percentage of group purchased plants and other inputs
- Marketing fee for woodchips
- Management fee for group management of plantations – machine and labour contracting.
- Transport arrangement fees

The minimum costs of operating a commercially sustainable farm woodland co-operative business we would estimate to be over £60,000 per annum (see Table 4 following), providing the necessary dedicated management resource with administration and marketing.

We have concluded that a co-operative with a minimum size of 250 producers managing an average of 12Ha each and planting an average of .5Ha per annum is necessary to ensure economic viability i.e. adequately covering the minimum costs. Refer to Tables 1 – 3.

The assumptions used to build the model are provided in Table 1. The co-operative business would act as an agent on behalf of its members organising various contracting, delivery and finance functions. It is envisaged that the management would be a component of an existing agency support organisation such as a Machinery Ring. The income streams are based on current average fees payable by machinery ring members acting as suppliers and demanders of the various throughputs.

**Table 1 financial model assumptions**

<b>Assumptions</b>			
Membership fee			£50
Av Ha of woodland per member			12
Av' annual volume of timber extrated per Ha			4
Conversion of green m3 to woodchip tonnes			1.48
Fell & extraction cost per m3 of timber			£24
Cost per m3 to chip and store			£8
Average contracting management fee			3.75%
Marketing fee for woodchip			4.00%
Transport cost of chips to user per tonne			£12
Price of woodchip ex store			£85
Av Ha planted each year by membership			0.5
Per Ha:			
Ground preperation cost			£625
Plants			£450
Planting			£375
Herbicides			£150
Fencing			£900

**Table 2 indicative co-operative turnover**

<b>Co-operative turnover</b>			
Woodchip sales			£689,189
Felling extraction and chipping			£384,000
Transport			£144,000
Establishment costs			£312,500
<b>Total turnover</b>			<b>£1,529,689</b>

**Table 3 retained income for the Co-operative**

<b>Co-operative retained income</b>			
Annual membership fee income			£12,500
Woodchip Marketing fee			£27,568
Establishment admin fee			£11,719
Fell, extraction, chipping contract fee			£10,800
Transport arrangement fee			£5,400
<b>Total income</b>			<b>£67,986</b>

**Table 4 – Indicative costs of running the Co-operative**

<b>An estimated cost of Co-op organisation</b>			
Management (inc NHI, pension)			£40,000
Travel 15,000 miles			£6,000
Office share and telephone, internet etc			£3,500
Statutory costs, proff fees			£4,000
Marketings costs, meetings			£10,000
<b>Total costs</b>			<b>£63,500</b>

*Notes*

*The various costs and income will require refinement during a detailed feasibility study.*

*The transport costs are payable by the woodchip purchaser, i.e. the woodchip cost is ex store, not delivered.*

*Cost such as establishment costs, beating up, thinning, felling, extraction and chipping would be carried out by co-operative members, these are not net costs posted out with the co-operative membership, i.e. these costs are internalised to within the co-operative membership. .*

## The Co-operative – what is it?

A co-operative is a business with distinguishing characteristics:-

- is a vehicle that facilitates co-operation between its members;
- contracts on behalf of its members;
- operates solely for the benefit of its members, who may be individuals; partnerships; incorporated or unincorporated businesses or bodies;
- allows its members to market, purchase and / or provide services and / or goods and / or share facilities;
- allows its members to deliver a given contract in different proportions; and
- members are not restricted from carrying out their own independent trading activity in tandem with operating with their co-operative partners on an ongoing basis.

A co-operative is a business like any other business but in several important ways it is unique and different. Co-operatives can be defined in terms of three basic interests: ownership, control and beneficiary. Only in the co-operative enterprise are all three interests vested directly in the hands of the user. Co-operatives exist solely to serve their members.

Co-operatives:

- are owned and democratically controlled by their members, the people who use the co-op's services or buy its goods;
- elect their board of directors from within the membership and co-opt additional board members where specialist expertise or knowledge is required;
- balance the need for profitability with the needs of their members and the wider interests of the community;
- are motivated by service - to meet their members' needs for affordable and high quality goods or services.

There are various legal forms of a co-operative and various pros and cons for each. Appendix 1 provides a comparison table for the three more common legal forms for a co-operative.

In Scotland all formally constituted farm co-operatives are registered with the Financial Services Authority (FSA) as 'Bona Fide Co-operative Societies'. This legal form is understood and trusted by farmers and is described in more detail in Appendix 3.

## Appendix 1 - Forms of Organisation, Comparison Notes.

	<b>Associations</b>	<b>Bona Fide Co-operatives</b>	<b>Limited Companies</b>
<b>Regulatory Authority</b>	None	Financial Services Authority	Companies House
<b>Minimum number of members</b>	2	3	1 - but if being utilised as a co-operative the minimum number would be 2
<b>Cost of registration</b>	N/A	£120	£20
<b>Registration documents</b>	N/A Internal governing document, constitution or rules	Constitution / Rules	Memorandum & Articles of Association
<b>Purpose</b>	Unincorporated associations take a variety of forms. Essentially people who come together with a common purpose e.g golf clubs, village hall community associations.	An organisation conducting an industry, business or trade, either as a co-operative or for the benefit of the community. Guarantees equity of ownership. Underpinned legally by the 7 co-op principles.	Suitable to use as a vehicle for a trading consortium Co-operative. It may distribute profits dependent upon the form of its Articles. Limits the liability of its members to the share capital or the nominal amount for a Co Ltd By Guarantee.
<b>Cost of registration documents</b>	N/A	Model from SAOS - £350 including any amendments.	Possible to incorporate by way of the use a shelf company at an approximate cost of £100 plus £20 registration fee. At the time of printing Co-operative Development Scotland are offering a complimentary set of generic Memorandum and Articles of Association to those incorporating as a Co-operative.
<b>Democracy</b>	As provided for in the Association's governing documentation. Ordinarily one vote per member.	Guaranteed by FSA for all members. 1 member 1 vote, 51% of votes carries ordinary resolutions. 75%+ carries legal changes to rules.	The company's Articles of Association may restrict the member's voting rights. Ordinarily each member has one vote.
<b>Ownership</b>	Although an unincorporated	All members guaranteed ownership	A Co Ltd by Guarantee has no.shares but

	association cannot own property, its office bearers may act as trustees to legally hold ownership of property and assets for the community they are intended to benefit.	according to their use of the co-operative. Ownership not specifically based on shares, shares are a form of providing capital and are the ownership link to voting.	members guarantee a nominal amount to become an owner/guarantor of the company. On a wind up the companies surplus assets may be distributed to the members. In a Company Ltd by shares, ownership is normally apportioned as per the share capital.
<b>New members</b>	Membership criteria may be provided for in the governing documentation. Membership may be at the discretion of the Committee or members. Alternatively, it may be open to all without any restrictions.	Membership is open to individuals or businesses who can use the services of the co-operative but subject to discretion of the Board. Liability limited to shares owned, often only £1 but more usually around £50 on joining.	Membership criteria provided for in the Articles. Membership may be at the discretion of the directors or members. Alternatively, it may be open to all without any restrictions. Members may be individuals, incorporated companies, unincorporated bodies and partnerships etc.
<b>Termination of membership</b>	May be provided for in the Association's governing document.	Usually at the behest of the board for acts considered prejudicial to the business, Rules specify procedure,	May be provided for in the Company's Articles of Association.
<b>Directors &amp; Board Committee and Sub-Committee</b>	Ordinarily run by Committee. May delegate certain powers to a sub-committee depending upon provisions of governing documentation.	At the discretion of the members set out in the rules. SAOS have info on best practice. Normally 5 to 8 on the board. Board elect Chair.	As provided for in the company's Articles of Association. These will provide for directors and board powers, removal, election, retirement and code of conduct etc.
<b>Executive powers</b>	As provided for in the Association's governing documentation or a supplementary agreement in respect of delegated committee powers etc	Rules set out the powers of the board and of the members and executive, but in general terms same as an ordinary company.	As provided for in the company's Articles of Association or a supplementary agreement in respect of delegated board powers etc
<b>Reporting</b>	Annual reporting to OSCR only if a charitable body.	Annual report to FSA, takes 30 minutes to complete. Searches for information by 3 <sup>rd</sup>	Annual Return including membership and accounts to Companies House.

		parties more difficult.	
<b>Audit</b>	No need to produce or publish any form of financial accounts (other than where the association is a charity, or to the extent needed to comply with tax law requirements).	Audit exemptions are as per company, but co-operatives' still require an accountant's report that must be done by an auditor. and so costs a little more than a company.	Company law provides for small company exemptions. However accountancy fees will be incurred.
<b>Tax</b>	No tax on retain surplus is payable if the work by the association is deemed to be for mutual benefit of its members.	Co-op can apply for 'Mutual' tax status - all profits can be retained without paying tax. All trade must be done with members. Agency mutual gets around the issue of selling goods to third parties,	May/may not be liable to pay corporation tax. However, accountancy advice should be sought.
<b>Charitable status</b>	If an unincorporated association has charitable aims, and those objects are for the public benefit, it may apply to the Office of the Scottish Charity Regulator for charitable status. Approximately 56% or 45,000 of charities are unincorporated associations.	Co-op can register for charitable status but must be registered as a 'Co-operative for the benefit of the Community' where ownership rights are restricted.	Only a Co Ltd by Guarantee can register with OSCR for charitable status.
<b>Capital</b>	Loans, donations, grants, funds from trading activities etc.	Members provide capital as a combination of shares, loans and retained surplus, often all three.	May be financed by its members. In Company Ltd by shares members may provide capital as share capital, this option is not available for Co's Ltd by Guarantee. Otherwise capitalisation from members is by way of loans and, retained profits.
<b>Advantages</b>	Unincorporated associations do not need to register with or be regulated by either Companies House or the Financial Services Authority. They enjoy	Simple legal underpinning (Industrial & Provident Acts) shared by all bona fide co-operatives. Known by the	Separate legal identity; ability to own property; ability to enter into; limited liability i.e. members of a Co Ltd

	<p>greater freedom of operation than a company.</p> <p>Constitution may be straightforward and easily understood.</p> <p>Charitable status / mutuality / a number of advantages from certain tax liabilities</p> <p>Unincorporated associations may carry out trading activities.</p>	<p>agricultural community.</p> <p>Based on equity among all members.</p> <p>Good network through SAOS providing assistance to boards &amp; managers.</p> <p>Co-op as a marketing name is becoming increasingly trusted,</p>	<p>by Guarantee only commit to pay a normal amount such as £1 if the company has outstanding debts.</p>
<b>Disadvantages</b>	<p>Not a legal entity in its own right.</p> <p>Liability is shared by all its members and not limited – so members' personal assets can be at risk in the event of a liability claim. .</p>	<p>The word co-op has some negatives for some.</p> <p>Credit agreements need a bit of patience, as providers cannot get information easily.</p>	<p>Company law is complex and legal advice is advised for changes in shares or shareholders agreements.</p> <p>A company limited by guarantee has no share capital its capital can only be obtained from loans, grants, retained profits.</p>
<b>Liability</b>	<p>The members carry the risk of personal liability.</p>	<p>Standard limited liability to the share capital and net assets of the business.</p>	<p>Limited liability to the sum of the guarantee or shares and the net assets of the business.</p>

## Appendix 2 - Table of assumptions

Operation	Estimated cost £/ha	Comment	
Planting:-			
Spot ground prep*	625	Farmers may choose to harrow or some other form of ground prep?	
Plants	450	Bulk purchase opportunity (267,000 ha of planting is 670m plants!)	
Planting	375	Farm labour/labour ring, could specialise in this area and cut the rate	
Spot herbicide	150	Again, herbicide might already be a stock farm commodity and labour could be internalised	
Rabbit Fencing £5/m	900	Depends on individual site	
All up planting cost	2500/ha	Scope in here for taking costs out of this part of the process and internalising with farm labour or engaging machinery ring	267,000 ha at £2.5k a ha, is c.£667m of business. That's £33m a year if done over 20 years say.
Beating up, variable. Perhaps expect to beat up 10% of a given site			
<b>Harvesting</b>	<b>Estimated cost per ODT</b>		
Fell, extract	£24	Could be done with local machinery group and labour. Basic chainsaws; simple extraction	

Chip and local store	£8	Chip it straight into farm trailers. Machinery ring invest in chipper	Take to local storage, either on farm or to covered storage in grain store (outwith season)
Onward transport to end user	£12	Will vary depending on location	Can be done with large tipping trailers and road tractors
<b>Total harvested cost</b>	<b>£44/odt</b>	Virtually all this operation could be internalised to the farmer/co-operative	
<b>Estimated margin tonne at 35%</b>	<b>In the range £30-£60</b>	Dependent on delivered price which is commonly £70-100/tonne	Margin available to cover fixed costs and processing equipment

## Appendix 3 - Bona Fide Co-operative Society

Such societies are formed primarily to benefit their own members, who will participate in the business of the society.

To satisfy the FSA that it will be a bona fide co-operative, a society will normally have to fulfil the following conditions, the first four of which also reflect the International Co-operative Alliance's Statement on the Co-operative Identity:

- Community of interest - There should be a common economic, social or cultural need or interest among all members of the co-operative.
- Conduct of business - The business will be run for the mutual benefit of the members, so that the benefit members obtain will stem principally from their participation in the business. Participation may vary according to the nature of the business and may consist of: of buying from or selling to the society; of using the services or amenities provided by it; or of supplying services to carry out its business.
- Control of the society lies with all members. It is exercised by them equally and should not be based, for example, on the amount of money each member has put into the society. In general, the principle of 'one member, one vote' should apply. Officers of the society should generally be elected by the members who may also vote to remove them from office.
- Interest on share and loan capital - Where part of the business capital is the common property of the co-operative, members should receive only limited compensation (if any) on any share or loan capital which they subscribe. Interest on share and loan capital must not be more than a rate necessary to obtain and retain enough capital to run the business. Section 1(3) of the 1965 Act states that a society may not be a bona fide co-operative if it carries on business with the object of making profits mainly for paying interest, dividends or bonuses on money invested with or lent to it, or to any other person.
- Profits - If the rules of the society allow profits to be distributed, they must be distributed among the members in line with those rules. Each member should receive an amount that reflects the extent to which they have traded with the society or taken part in its business. For example, in a retail trading society or an agricultural marketing society, profits might be distributed among members as a dividend or bonus on purchases from or sales to the society. In other societies (for example, social clubs) profits are not usually distributed among individual members but members benefit through cheaper prices or improvements in the amenities available.
- No restriction on membership - There should be open membership. This should not be restricted artificially to increase the value of the rights and interests of current members, but there may be grounds for restricting membership in certain circumstances, which do not offend co-operative principles. E.g. Where applicants for membership do not have any ability to use the services provided by the co-operative.

